

Exhibit 300: Capital Asset Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview & Summary Information

Date Investment First Submitted: 2009-06-30
Date of Last Change to Activities: 2012-08-23
Investment Auto Submission Date: 2012-02-27
Date of Last Investment Detail Update: 2012-02-27
Date of Last Exhibit 300A Update: 2012-08-23
Date of Last Revision: 2012-08-23

Agency: 021 - Department of Transportation **Bureau:** 12 - Federal Aviation Administration

Investment Part Code: 01

Investment Category: 00 - Agency Investments

1. Name of this Investment: FAAXX704: Automatic Dependent Surveillance-Broadcast (ADS-B)

2. Unique Investment Identifier (Ull): 021-142305975

Section B: Investment Detail

- Provide a brief summary of the investment, including a brief description of the related benefit to the mission delivery and management support areas, and the primary beneficiary(ies) of the investment. Include an explanation of any dependencies between this investment and other investments.**

The Surveillance and Broadcast Services (SBS) program office is implementing Automatic Dependent Surveillance–Broadcast (ADS-B), a surveillance system designed to provide improved air traffic information for pilots and air traffic controllers. ADS-B supports the FAA mission and goals to increase economic competitiveness and safety, influencing the performance metrics for Average Daily Airport Capacity and National Airspace System (NAS) On-Time Arrivals. This investment provides operational, user and government benefits, and directly contributes to the FAA mission of reducing congestion and providing increased capacity in the NAS. ADS-B also facilitates the transition to the Next Generation Air Transportation System (NextGen). ADS-B is the cornerstone technology for NextGen and promises to significantly increase efficiency and enhance safety by broadcasting aircraft position based on precise signals from the Global Navigation Satellite System – effectively tracking and managing air traffic. ADS-B provides more accurate, timely and comprehensive surveillance information. The aircraft's ADS-B Out equipment processes position information and flight parameters such as identification, indication of climb or descent angle, velocity, next waypoint, and other data for a periodic broadcast transmission, typically once a second, to the ADS-B ground station. This information will be used for surveillance applications and Air Traffic Services Displays on automation systems such as En Route Automation Modernization (ERAM), Common Automated Radar Tracking System (CARTS), Standard

Terminal Automation Replacement System (STARS), HOST, and Advanced Technologies and Oceanic Procedures (ATOP). Nearby aircraft equipped with ADS-B In avionics may receive and process surveillance information for display to the pilot using the aircraft's multifunction display. Pilots use the display to enhance situational awareness of the surrounding airspace. ADS-B equipment may also be placed on ground vehicles to allow controllers and pilots to locate and identify them when they are on runways or taxiways. This program has dependencies with ERAM, STARS, Airport Surface Detection Equipment -Model X (ASDE-X), Traffic Management Advisor-Single Center (TMA), Terminal Automation Modernization and Replacement (TAMR) and Advanced Technologies and Oceanic Procedures (ATOP).

2. How does this investment close in part or in whole any identified performance gap in support of the mission delivery and management support areas? Include an assessment of the program impact if this investment isn't fully funded.

While current surveillance methods are generally adequate for today's environment, these surveillance methods will not support continued aviation growth without loss of efficiency within the NAS. As the request for additional services and traffic demand increases, system inefficiencies will increase in the form of delays and restrictions across the NAS. The current surveillance systems do not take advantage of new technologies in navigation, communication, and flight management. Expansion of surveillance coverage is essential to support air traffic control modernization efforts. According to the Joint Government and Industry Roadmap for Surveillance Modernization, the Air Traffic environment of the future will be increasingly dependent on more accurate and timely information being available to Air Traffic Service providers and aircraft operators. Information pertaining to a variety of airspace conditions and accurate position data, including aircraft intent, will be necessary. With ADS-B, pilots will see what controllers see: displays showing other aircraft in the sky. Cockpit displays also pinpoint hazardous weather and terrain, and give pilots important flight information, such as temporary flight restrictions. ADS-B also reduces the risk of runway incursions with cockpit and controller displays that show the location of aircraft and equipped ground vehicles on airport surfaces. ADS-B applications, currently being developed, will give pilots direct warnings of potential collisions. ADS-B also provides greater coverage since ground stations are so much easier to place than radar. Remote areas without radar coverage, like the Gulf of Mexico and parts of Alaska, now have surveillance with ADS-B. Relying on satellites instead of ground navigational aids also means aircraft will be able to fly more directly from Point A to B, saving time and money, and reducing fuel burn, noise and emissions. The improved accuracy, integrity and reliability of satellite signals over radar means controllers eventually will be able to safely reduce the mandatory separation between aircraft and increase capacity in the nation's skies. Failing to complete the ADS-B infrastructure implementation due to lack of funding would result in loss of the business benefits that were identified as part of the ADS-B business case. Stakeholders would delay equipping aircraft, resulting in further reductions in benefits and the need to re-accomplish the rule for equipage by 2020.

3. Provide a list of this investment's accomplishments in the prior year (PY), including projects or useful components/project segments completed, new functionality added, or operational efficiency achieved.

- Released Request for Offer (ROF) to replace 9 ASDE-3/AMASS systems with Airport Surface Surveillance Capability.
- Obtained the decision for expansion of SBS at the

Anchorage ARTCC. - Developed ADS-B automation requirements for ATOP. - Updated the ADS-B Performance Route Strategy Plan. - Completed Target Level of Safety draft Performance and Safety Assessment for En Route 3 Nautical Mile. - Obtained approval of the ITT Design covering Critical and Multilateration Services for Colorado Phase 2 Service Volumes. - Began In Trail Procedures evaluation flights in the Pacific. - Began implementation of Essential and Critical Services for 40 Service Volumes. - Delivered Industry recommendations for incorporating ADS-B In into the NAS through the use of the ADS-B In ARC. - An Aviation Rulemaking Committee will make recommendations for the implementation of ADS-B applications requiring a cockpit display by 9/30/11, with detail and next steps by June 2012.

4. Provide a list of planned accomplishments for current year (CY) and budget year (BY).

In CY2012 the program will include the following activities: - Continue NAS-Wide deployment of ADS-B. - Develop ADS-B software for the Advanced Technologies and Oceanic Procedures (ATOP) automation platform. - Completion of Initial Operating Capability (IOC) at Montrose Key Site - Colorado WAM Phase 2. - Completion of Critical Services Implementation Service Acceptance Testing at 33 Service Volumes. - Completion of Initial Operating Capability (IOC) - Surface Advisory Services at 10 Sites. - Completion of Initial Operating Capability (IOC) - Terminal ATC Separation Services at 27 Sites. - Continue development of future applications: Ground-Based Interval Management - Spacing development and deployment Flight Deck Based Interval Management - Spacing flight trials In Trail Procedures Operational Evaluation Traffic Situation Awareness with Alerts. - Subscription Fees: Subscription Fees are being included as a Project and Activities in the E300 Part B.1 and B.2 tables. Subscription fees are budgeted from F&E funds on a yearly basis, and cannot be readily broken down into six month increments. Anticipated BY 2013 accomplishments: - Completion of IOC - All Remaining Sites - Colorado WAM Phase 2. - Completion of IOC for En Route Automation Modernization Release 3 Air Traffic Control Separation Services at 17 Sites. - Completion of IOC for Surface Advisory Services at 12 Sites. - Completion of Critical Services Implementation Service Acceptance Testing at 103 Service Volumes. - Completion of IOC for Terminal ATC Separation Services at 52 Sites. - Validation of Minimum Operational Performance Standards (MOPS) for In Trail Procedures. - Validation of Flight Deck Interval Management (MOPS). - Validation of Traffic Situational Awareness with Alerts (MOPS). - Completion of Ground Based Interval Management Integration Testing. Concurrent to the deployment and implementation of ADS-B, the agency has signed agreements with several airlines (JetBlue, United and US Airways). These agreements are set up to demonstrate the benefits of advanced ADS-B applications and procedures during revenue service. The operational evaluations will give the agency detailed cost and benefit data, and encourage airlines to equip early to capitalize on ADS-B benefits.

5. Provide the date of the Charter establishing the required Integrated Program Team (IPT) for this investment. An IPT must always include, but is not limited to: a qualified fully-dedicated IT program manager, a contract specialist, an information technology specialist, a security specialist and a business process owner before OMB will approve this program investment budget. IT Program Manager, Business Process Owner and Contract Specialist must be Government Employees.

2007-08-27

Section C: Summary of Funding (Budget Authority for Capital Assets)

1.

Table I.C.1 Summary of Funding

	PY-1 & Prior	PY 2011	CY 2012	BY 2013
Planning Costs:	\$9.9	\$0.0	\$0.0	\$0.0
DME (Excluding Planning) Costs:	\$710.7	\$179.8	\$288.0	\$272.1
DME (Including Planning) Govt. FTEs:	\$28.6	\$6.3	\$6.8	\$4.5
Sub-Total DME (Including Govt. FTE):	\$749.2	\$186.1	\$294.8	\$276.6
O & M Costs:	\$11.0	\$5.0	\$6.4	\$7.9
O & M Govt. FTEs:	\$2.6	\$0.3	\$0.4	\$0.2
Sub-Total O & M Costs (Including Govt. FTE):	\$13.6	\$5.3	\$6.8	\$8.1
Total Cost (Including Govt. FTE):	\$762.8	\$191.4	\$301.6	\$284.7
Total Govt. FTE costs:	\$31.2	\$6.6	\$7.2	\$4.7
# of FTE rep by costs:	202	38	38	24
Total change from prior year final President's Budget (\$)		\$0.0	\$-2.0	
Total change from prior year final President's Budget (%)		0.00%	-0.66%	

2. If the funding levels have changed from the FY 2012 President's Budget request for PY or CY, briefly explain those changes:

FY12 Funding was reduced to remove DOT Infrastructure adjustment and was transferred to out-year requirements. Additional funding was added in the out-years for a future segment for which a Final Investment Decision is planned for the spring.

Section D: Acquisition/Contract Strategy (All Capital Assets)

Table I.D.1 Contracts and Acquisition Strategy

Contract Type	EVM Required	Contracting Agency ID	Procurement Instrument Identifier (PIID)	Indefinite Delivery Vehicle (IDV) Reference ID	IDV Agency ID	Solicitation ID	Ultimate Contract Value (\$M)	Type	PBSA ?	Effective Date	Actual or Expected End Date
Awarded		DTFAWA-07-C-00067									
Awarded		DTFWA-10-C-00080									
Awarded		DTFAWA-03-C-00070									
Awarded		DTFAWA-09-A-00002									
Awarded		DTFAWA-11-D-00017/0010									
						Solicitation ID	Type of Contract/Task Order (Pricing)	PBSA	Effective date	Extent Completed	Short description of acquisition
							Firm Fixed Price	N	2011-09-19	U	DELIVERY ORDER FOR RESEARCH SUPPORTING THE SBS PROGRAM OFFICE. TAS::69 8107::TAS
Awarded		DTFAAC-09-D-00081									
Awarded		DTFAWA-03-C-00071									
Awarded		DTFAWA-11-C-00003									
Awarded		DTFAWA-09-C-00012									
Awarded		DTFAWA-09-A-00001									
Awarded		DTFAWA-11-A									

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2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

All contracts require EVM.

Exhibit 300B: Performance Measurement Report

Section A: General Information

Date of Last Change to Activities: 2012-08-23

Section B: Project Execution Data

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost (\$M)
1	Colorado Wide Area Multilateration (WAM Phase 2)	Implement ADS-B/multilateration surveillance systems at 4 Colorado mountain airports - APB MILESTONE.			
2	3 Nautical Mile Separation	Enable three-mile separation standards in order to move airplanes more efficiently through the NAS.			
3	Automation Upgrades	The Automation Upgrades project includes ERAM, ATOP and STARS.			
4	Air Traffic Control (ATC) Surface Advisory Services	Integration of aircraft position data from ADS-B transmissions into ATC Surface Advisory Services.			
5	Ground Based Interval Management (GIM)	Display of along-track guidance, control and indications, and alerts.			
6	En Route ATC Separation Services	Integration of aircraft position data from ADS-B transmissions into En Route ATC Separation Services.			
7	Terminal ATC Separation	Terminal ATC Separation			

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost (\$M)
	Services	Services.			
8	In Trail Procedures	Provide operational benefits in non-surveillance airspace by enabling "in-trail" climbs/descents at reduced separation distances.			
9	Flight Deck Based Interval Management - Separation (FIM-S)	FIM-S is a set of capabilities and procedures supported by ground and flight deck (FIM) components for controllers and flight crews to use in combination to manage inter-aircraft spacing.			
10	Traffic Situational Awareness with Alerts (TSAA)	Enhance safety in the National Airspace System by providing alerts to General Aviation pilots of conflicting airborne traffic.			
11	Avionics Upgrades	Upgrade Avionics 260B and 282B.			
12	Service Volumes ISAT	Critical Services Implementation Service Acceptance Testing (ISAT).			
13	Subscription Fees	Subscription Fees.			

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities (\$M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance (\$M)	Cost Variance (%)	Total Planned Cost (\$M)	Count of Activities
1	Colorado Wide Area Multilateration (WAM Phase 2)							
2	3 Nautical Mile Separation							
3	Automation Upgrades							
4	Air Traffic Control (ATC) Surface Advisory Services							

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities (\$M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance (\$M)	Cost Variance (%)	Total Planned Cost (\$M)	Count of Activities
5	Ground Based Interval Management (GIM)							
6	En Route ATC Separation Services							
7	Terminal ATC Separation Services							
8	In Trail Procedures							
9	Flight Deck Based Interval Management - Separation (FIM-S)							
10	Traffic Situational Awareness with Alerts (TSAA)							
11	Avionics Upgrades							
12	Service Volumes ISAT							
13	Subscription Fees							

Key Deliverables

Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
3	Initial Operating Capability (IOC) - Common Automated Radar Terminal System (CARTS) at New York	CARTS at New York completed.	2011-06-30	2011-06-30	2011-07-24	272	-24	-8.82%
3	IOC - ADS-B Capability on STARS at Houston TRACON - APB MILESTONE	ADS-B capability on STARS system at Houston TRACON - APB MILESTONE.	2011-06-30	2012-03-30	2012-03-28	272	-272	-100.00%
1	Colorado Wide Area Multilateration (WAM)	Colorado WAM Phase 2 Critical Design	2011-07-31	2011-07-31	2011-07-27	303	4	1.32%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
	Phase 2 Critical Design Review	Review.						
3	IOC - ERAM with ADS-B at Houston - APB MILESTONE	Initial Operating Capability - ERAM with ADS-B at Houston TRACON - APB MILESTONE.	2011-09-30	2012-03-30	2012-04-14	364	-197	-54.12%
7	Initial Operating Capability - Terminal ATC Separation Services at 1 Site (3 Cumulative)	Initial Operating Capability (IOC) of Terminal ATC Separation Services at 1 Site.	2011-09-30	2011-11-30	2011-11-30	364	-61	-16.76%
12	Critical Services (ISAT) at 72 Service Volumes (79 Cumulative)	79 Cumulative Critical Services (ISAT) Service Volumes Completed.	2011-09-30	2011-12-31	2011-12-31	364	-92	-25.27%
7	Initial Operating Capability - Terminal ATC Separation Services at 1 Site (4 Cumulative)	Initial Operating Capability (IOC) of Terminal ATC Separation Services at 1 Additional Site.	2012-03-31	2012-03-31	2012-03-31	182	0	0.00%
12	Critical Services (ISAT) at 50 Service Volumes (129 Cumulative)	129 Cumulative Critical Services (ISAT) Service Volumes Completed.	2012-03-31	2012-03-31	2012-03-31	182	0	0.00%
1	Colorado WAM Phase 2 Key Site (Montrose) ISAT	Colorado WAM Phase 2 - Independent Systems Acceptance Test.	2012-05-31	2012-08-31		304	-92	-30.26%
2	Complete Final Target Level of Safety (TLS) Assessment for 2 Nautical Mile	3NM - Target Level of Safety Final Assessment Due.	2012-06-30	2012-09-30		90	-92	-102.22%
6	Initial Operating Capability - En Route ATC Separation Services at 4 Sites (5 Cumulative)	Initial Operating Capability (IOC) of En Route ATC Separation Services at 4 Sites.	2012-09-30	2012-09-30		365	0	0.00%
7	Initial Operating Capability - Terminal	Initial Operating Capability (IOC) of	2012-09-30	2012-09-30		182	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
	ATC Separation Services at 15 Sites (19 Cumulative)	Terminal ATC Separation Services at 15 Sites.						
1	Colorado Wide Area Multilateration (WAM) Phase 2 Key Site (Montrose) - APB MILESTONE	Colorado WAM Phase 2 - Initial Operating Capability at Key Site (Montrose) - APB MILESTONE.	2012-09-30	2012-09-30		121	0	0.00%
12	Critical Services (ISAT) at 39 Service Volumes (168 Cumulative)	168 Cumulative Critical Services (ISAT) Service Volumes Completed.	2012-09-30	2012-09-30		182	0	0.00%
3	ATOP - 1st Software Delivery	ATOP Software Delivery Due.	2012-10-31	2012-10-31		304	0	0.00%

Section C: Operational Data

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Percent difference in 5-year Alaska aviation accident rate for Part 135 aircraft comparing ADS-B equipped and non-equipped aircraft	Percent	Mission and Business Results - Services for Citizens	Over target	0.000000	18.000000	31.000000	18.000000	Semi-Annual
Semi-annual estimated time comparing ADS-B equipped and non-equipped helicopter flights in low altitude Gulf of Mexico	Hours	Technology - Efficiency	Under target	0.000000	1555.000000	1041.000000	1555.000000	Semi-Annual
Wide Area Multilateration (WAM) Service Latency: The WAM Service latency from the time of receipt of the first bit of an ADS-B or reply message to the time the first bit of a target report is received at the SDP shall be less than or equal to 700 ms.	Milli-seconds	Technology - Reliability and Availability	Under target	700.000000	700.000000	545.000000	700.000000	Monthly
Position Update interval - Terminal: The WAM Service shall provide for each aircraft in the Terminal domain a WAM Report containing position information with an update interval no	Seconds	Customer Results - Timeliness and Responsiveness	Under target	3.000000	3.000000	3.000000	3.000000	Monthly

Table II.C.1 Performance Metrics								
Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
greater than 3.0 seconds (95%) at each SDP								
WAM Availability: The WAM Service shall [096] meet a minimum Availability of 0.99996 at SDPs identified as critical.	Availability	Technology - Reliability and Availability	Over target	0.999960	0.999960	0.999960	0.999960	Monthly